

## Trees and Shrubs

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A number of interesting tree and shrub species occur at Canaveral National Seashore (CANA) which can be easily learned by the amateur naturalist. These includes three species of mangroves that grow along the edge of Mosquito Lagoon. Mangroves have specialized structural and physiological adaptations that enable them to endure high salt concentrations and low oxygen concentrations. They actually would grow well in other environments but are out-competed by other plant species, so must exist in the harsh environment along the lagoon's edge where other species cannot survive.

Mangroves provide valuable habitat for a myriad of animal life including fish, birds, amphibians, reptiles, invertebrates and mammals. The branches provide nesting sites for herons, storks, ibises and other wading birds; the disintegrating leaves are an important food source for many species of fish, shrimp, oysters and other aquatic species; mangrove roots stabilize the shoreline, reduce erosion and improve water quality by slowing water currents and absorbing the impact of wind and waves; and the roots provide critical substrate for oysters, barnacles and many other species. Due to their ecological importance they are protected by Florida law.

**Red mangrove** (*Rhizophora mangle*) grows in the water, and is easily recognized by conspicuous stilt-like prop roots. It also has odd, long, green, cigar-shaped fruits. **Black mangrove** (*Avicennia germinans*) grows next closest to the water. This species has clusters of distinctive aerial roots known as pneumatophores that stick up out of the mud like pencils around the plant. The surface of the leaves have a grayish hue, caused by a build-up excess salt, excreted by the plant. The **white mangrove** (*Laguncularia racemosa*) grows farthest from the water and has oval-shaped leaves, as opposed to the more pointed leaves of the red and black mangroves. It gets rid of excess salt in a different manner than black mangrove. Look closely at the leaf stalk (petiole) where it joins with base of the leaf blade. You will see two small bumps or glands where excess salt is excreted. An associated species, **buttonwood** (*Conocarpus erecta*), is not technically a mangrove but often grows with them and is easily recognized when the numerous, rounded, brown, marble-sized fruits or "buttons" are present.

CANA is near the northern limit of the mangroves' ranges. The plants flourish during warm periods and even grow to the size of small trees. However, when freezing weather hits, the plants will die back. A series of cold spells in the 1980's caused massive damage to the mangroves around Mosquito Lagoon. Large, dead trunks are particularly noticeable along the west side of the South District beach road (between Parking Areas 3 and 12) and south of the highway just east of the New Smyrna Beach causeway on the way to the North District of CANA. Warmer weather in subsequent years has allowed the plants to resprout from the bases, creating a lush carpet of smaller shrubs underneath the gnarled skeletons of the prior generation. This pattern of ebb and flow is common for plants on the extreme edge of their range.

Probably the most dominant terrestrial plant in the Seashore is **saw palmetto** (*Serenoa repens*). Its large fan-shaped leaves are one of the first things many visitors notice about CANA. A shrub, it grows in thick, almost impenetrable expanses along the barrier island and mainland portions of the park. It also occurs as an understory shrub in hammocks and pine flatwoods. The thick trunk can lie prostrate on the ground, often partially buried, or be erect. Named for the sharp teeth along the petiole, saw palmetto is extremely flammable and performs the vital role of carrying fire in CANA's fire adapted communities (for more information on the importance of fire see Environmental Factors/Fire Regime). It is among the first species to green up after a fire due to the food stored in the large root system. The large clusters of palmetto berries are a critical source of food for many terrestrial species. They were also an important source of food for the Native Americans who lived in the area for thousands of years. European accounts mentioned that lesser villages presented baskets of berries as tribute to ruling chiefs. One humorous account by a shipwrecked Englishman in the 1690's claimed that the palmetto berries given to him by the Native Americans were inedible, tasting like rotten cheese steeped in tobacco juice. Over time his hunger increased and he too was soon devouring them. He also noted that the large leaves were used by the natives to construct the walls and roofs of their huts.

In the late 1800's, saw palmetto berries were grown in the Eldora section of CANA and marketed as a general cure-all called Salmetto. Historic photos show huge racks of berries set out in the sun to dry. Today, scientists recognize that the berries contain chemicals useful in the treatment of prostrate cancer. Recent research has also shown that the plant can be extremely long-lived, reaching ages of 700 years or more.

A tree that is sometimes confused with saw palmetto before it obtains full height is the **cabbage palm** (*Sabal palmetto*). This is the state tree of both Florida and South Carolina. Trees can grow singly or form a significant part of the canopy in hammocks. Like the saw palmetto, it has large fan-like leaves, but lacks sharp teeth along the petiole. In addition, the petiole extends up into the leaf blade, whereas the saw palmetto's petiole stops at the base of the blade. Native Americans and Florida settlers harvested the large leaf bud located at the top of the plant for food. Unfortunately this kills the plant. The buds can still be found on the menus of some local restaurants under the name of "swamp cabbage". The clusters of berries are an important food for wildlife. Visitors often ask why some cabbage palms retain the distinctive woody leaf bases (known as boots) from many growing seasons along the length of their trunks, while other cabbage palms lose theirs. Botanists have yet to answer this question. The base of the boots provide a niche for the germination of plant species such as the aptly named shoestring fern (*Vittaria lineata*) and attractive golden polypody (*Phlebodium aureum*), as well as microhabitat for many species of frogs and other small animals.

**Live oak** (*Quercus virginiana*) is the primary overstory tree in hardwood hammocks and co-dominant with cabbage palm in mixed hammocks. Large, old specimens can be extremely picturesque, with a huge arching canopy, gnarled moss-covered limbs, and dangling curtains of Spanish moss. True to its name, it retains leaves all year long. Unlike most of CANA's other oaks, it ranges beyond the boundaries of Florida.

The other oak species are much smaller, only reaching heights of 12 -15 feet if fire is artificially excluded for several decades. They are known as "scrub live oaks" and grow in the coastal scrub plant community. This habitat supports a number of rare and protected animal species such as the Florida scrub jay, Eastern indigo snake and gopher tortoise. The three primary species of scrub oak are **myrtle** (*Quercus myrtifolia*), **Chapman's** (*Q. chapmanii*) and **sand live oak** (*Q. geminata*). At first they all look alike but with a little practice can be told apart. The acorns are a critical source of food for the scrub jay which buries them in bare patches of sand (see Animals/Birds for additional information on the fascinating scrub jay).

Good examples of the pine flatwoods plant community can be seen along the west side of State Road 3, just south of Oak Hill. The dominant pine species is **slash pine** (*Pinus elliotti*). A number of the pines in this area contain bald eagle nests which are reused year after year (for more on eagles see Animals/Birds). As it is with many other plant species, CANA is at the range limit for slash pine, in this case involving two subspecies. The northern subspecies (*P. elliotti* var. *elliotti*) reaches its southern limit in central Florida while South Florida or Dade County slash pine (*P. elliotti* var. *densa*) reaches its northern limit in the CANA area. The South Florida variety possess several adaptations to survive fire that are lacking in the other subspecies, exhibiting the importance of fire in the central and south Florida ecosystems. The bark is thicker and the tree has what is known as a "grass stage", where seedlings look like a small clump of grass for as many as seven years after germination. In this form, the plant is relatively safe from low intensity fires. Although the plant appears to be dormant, it is actually developing a large underground trunk and storing food. Once this is complete, the seedling produces a vigorous growth spurt, pushing the vulnerable terminal bud above the height of potential flames in a very short period of time. Grow rates can reach two or more feet a year.

Another distinctive pine is **sand pine** (*P. clausa*), which only grows on relict sand dunes. Wherever you see it, ocean waves once lapped nearby. It has short needles (1.5 - 3 inches) in clumps of two, whereas slash pine needles are longer (8 - 10 inches) and in clumps of two or three. **Longleaf pine** (*P. palustris*), which also has a grass stage, and **pond pine** (*P. seotina*), which favors wet sites, also occur in the park.

Hammock areas, such as Turtle Mound, Castle Windy and the North District Oak Hammock Trail contain several other notable tree species. The most asked about species is **nakedwood** or **twinberry stopper** (*Myrcianthes fragrans*). It exhibits a striking smooth, tan-colored trunk, produced by naturally peeling bark. Watch for other species with corky growths on the trunk that look like warts. The leaves have long tapered points and are uneven at the base of the blade. This is **hackberry** or **sugarberry** (*Celtis laevigata*). Another species with dark bark, and dark green, stiff, pointed leaves, that exude a familiar aromatic odor when crushed, is the **red bay** (*Persea borbonia*). An occasional **Southern magnolia** (*Magnolia grandiflora*) and **pignut hickory** (*Carya glabra*) can also be seen.

Common subtropical shrubs in the hammock understory include **white stopper** (*Myrsine punctata*) and **marlberry** (*Ardesia escallonioides*). If you have a good nose, you may notice the distinctive, skunky odor of white stopper as you pass by. Other identifying traits are opposite, toothless leaves and gray stems. Marlberry has alternate, toothless leaves, reddish twigs and attractive, terminal clusters of white flowers that appear almost any time of the year.

Many other species of trees and, especially, shrubs can be found at CANA. Upon request, the park can supply a complete plant species list and recommend good field identification manuals for the CANA area. Happy botanizing!